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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,013	03/02/2004	Yutaka Takahashi	33082M0871	3575

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EXAMINER

KORNAKOV, MICHAIL

ART UNIT PAPER NUMBER

1746

DATE MAILED: 10/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/790,013

Applicant(s)

TAKAHASHI ET AL.

Examiner

Michael Kornakov

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. The cancellation of claim 18 in Applicants' amendment, dated 07/22/2005 is acknowledged.
2. Claims 19-22 are currently pending.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 19-22 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Niino in view of JP07-335563 and as evidenced by Sandhu et al (U.S. 6,201,219) and CAS No. 7790-91-2 or U.S. 5,413,967 to Matsuda et al.

Niino teaches a cleaning method for CVD treatment apparatus, having a treatment vessel, the said method comprising preheating the ClF_3 cleaning gas outside the treatment vessel and feeding the preheated cleaning gas into the treatment vessel, while the treatment vessel is heated and kept at a predetermined temperature. The treatment vessel is made from quartz and the film, removed from the treatment vessel in the teaching of Niino is the same kind as a film, formed on a surface of the object to be processed in the treatment vessel (Abstract; col.5, lines 23-31; col. 8, lines 6-9; paragraph, bridging col.8 and 9; col.14, lines 4-8). The teaching of Niino remains silent about the preheating temperature being in the range of 300°C to 1000°C.

JP'563 teaches cleaning a reaction container and indicates that activating the cleaning gas by its **decomposition** before the introduction into the reaction container beneficially affects the cleaning process (Abstract, 0003, 0007, 0015, 0016, 0017).

While as a specific cleaning gas JP'563 indicates the use of NF_3 , Sandhu teaches that

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NF₃ and ClF₃ are equally used for thermal chamber cleaning, thus recognizing the equivalency between NF₃ and ClF₃ for the same purpose (col.6, lines 43-45).

Therefore, one skilled in the art, motivated by the teaching of JP'563 would have found obvious to preheat ClF₃ cleaning gas up to a heat **decomposition temperature**, as advised by JP'563, before introducing it into the treatment vessel in order to enhance effectiveness of the cleaning process of Niino with the reasonable expectation of success.

Since Niino/JP'563 teach the cleaning process based on the decomposition of ClF₃, the value of decomposition temperature of ClF₃ is inherently present within the teaching of Niino/JP'563. Regarding the decomposition temperature value, OSHA and CAS No. 7790-91-2 recite the decomposition temperature of chlorine trifluoride, which is **above 220 °C** and U.S. 5,413,967 to Matsuda et al. more specifically indicates that chlorine trifluoride thermally decomposes to chlorine and fluorine radicals at 380°C (col.7, lines 40-48). The references to OSHA and U.S. 5,413,967 are provided to show that a characteristic not disclosed in the reference is inherent, consult **Continental Can CO.**, 948 F2ndUSPQ2nd 1746 (Fed.Cir. 1991).

Response to Arguments

5. Applicant's arguments filed 07/22/2005 have been fully considered but they are not persuasive.

Applicants argue that "None of the cited, alleged, references teaches or fairly suggests the above described features of the claimed method". Applicants further

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indicate that JP07-335563 discloses no more than heating the cleaning gas up to only 220 °C. Applicants' attention is drawn to JP07-335563, which provides for cleaning a reaction container and indicates that activating the cleaning gas by its **decomposition before the introduction into the reaction container** beneficially affects the cleaning process. JP07-335563 does not recite heating the cleaning gas up to 220°C, but teaches activating the cleaning gas by its thermal decomposition, the temperature of which is an intrinsic property, inherently present in the combined teaching of Niino/JP'563.

With regard to Applicants' argument that "there is nothing in the combined teachings of the cited art which would have motivated those of ordinary skill to have devised Applicants' recited preheating step", Applicants' attention is drawn to the teachings of Niino and JP 07-335563, wherein such preheating step is clearly indicated.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Kornakov whose telephone number is (571) 272-1303. The examiner can normally be reached on 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "M. Kornakov", with a long, sweeping checkmark-like flourish extending from the end.

Michael Kornakov
Primary Examiner
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10/03/2005